

Amendments to the Claims:

19-49. (Cancelled)

50. (New) A method of during the manufacture of a slider member to be used in sliding relation to an other member, forming micro-protrusions on or micro-cavities in a surface of a substrate from which is formed said slider member, in a manner to reduce sticking between said surface and the other member and to reduce entrapment of foreign particles therebetween, said method comprising:

placing said substrate in a process chamber;

supporting a mask member in front of said surface of said substrate, said mask member disposed in contact with or in proximity of said substrate surface;

irradiating fast atomic beams through said mask member onto said surface of said substrate, and thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the other member and to said surface of said substrate; and

forming a magnetic film layer and a protective film layer on said micro-protrusions or said micro-cavities.

51. (New) A method as claimed in claim 50, wherein said mask member has a plurality of openings arranged in matrix-type array formed on a plate.

52. (New) A method as claimed in claim 51, wherein said opening is circular-shaped, oval-shaped, square-shaped or honeycomb-shaped.

53. (New) A method as claimed in claim 51, wherein said opening is rhombus-shaped or hexagonal-shaped.

54. (New) A method as claimed in claim 50, wherein said slider member comprises a magnetic disc or a magnetic head.

55. (New) A method as claimed in claim 50, wherein said surface of the substrate comprises glass.

56. (New) A method as claimed in claim 50, wherein said irradiating comprises directing, said fast atomic beams from a beam source at an angle of incidence determined by an angle of inclination measured with respect to a rotation axis normal to said surface of said substrate, and rotating one of said beam source and said substrate about said rotation axis relative to the other of said beam source and said substrate.

57. (New) A method as claimed in claim 50, wherein said irradiating comprises a first irradiation operation of irradiating said fast atomic beams through a first mask member comprising parallel wires or rods disposed adjacent to said surface of said substrate, and a second irradiation operation of irradiating said fast atomic beams through a second mask member comprising parallel wires or rods disposed adjacent to said surface of said substrate.

58. (New) A method as claimed in claim 50, wherein said protective layer comprises carbon, SiO₂, or ceramic material.

59. (New) A method as claimed in claim 50, wherein said irradiating comprises directing said fast atomic beams substantially at a right angle onto said surface of said substrate.

60. (New) A method as claimed in claim 50, wherein said angle is from approximately 90° to approximately 110°.

61. (New) A method as claimed in claim 50, wherein said angle is from approximately 80° to approximately 90°.

62. (New) A method as claimed in claim 50, wherein said angle is substantially 90°.

63. (New) A method as claimed in claim 50, wherein said mask member comprises micro-objects dispersed on said surface of said substrate.

64. (New) A method as claimed in claim 63, wherein said micro-objects comprise micro-particles of powder.

65. (New) A method as claimed in claim 63, wherein said micro-objects are formed from at least one material selected from the group consisting of alumina, carbon, Si₃N₄, SiC, TiN, ZrO₂, MgO and synthetic resin.

66. (New) A method as claimed in claim 64, wherein said micro-objects are susceptible to etching by said fast atomic beams.

67. (New) A method as claimed in claim 64, wherein said micro-objects are not susceptible to etching by said fast atomic beams.

68. (New) A method as claimed in claim 50, wherein said mask member comprises a plurality of fine wire or rod members disposed adjacent said surface of said substrate.

69. (New) A method as claimed in claim 68, wherein said plurality of wire or rod members extend parallelly.

70. (New) A method as claimed in claim 68, wherein said plurality of wire or rod members are arranged to form a matrix.

71. (New) A method as claimed in claim 50, wherein said micro-protrusions or micro-cavities have a height or depth of approximately 10nm.

72. (New) A method of, during the manufacture of a slider member to be used in sliding relation to an other member, forming micro-protrusions on or micro-cavities in a surface of said slider member in a manner to reduce sticking between said surface and the other member and to reduce entrapment of foreign particles therebetween, said method comprising:

depositing a protective film layer on a substrate;

placing said substrate in a process chamber;

supporting a mask member in front of said surface of said protective film layer, said mask member disposed in contact with or in proximity of said surface;

irradiating fast atomic beams through said mask member onto said surface of said protective film layer, and thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the other member.

73. (New) A method as claimed in claim 72, wherein said protective layer comprises carbon, SiO₂, or ceramic material.

74. (New) A method as claimed in claim 72, wherein a magnetic film layer is formed between the protective film layer and the substrate.

75. (New) A method of, during the manufacture of a slider member to be used in sliding relation to an other member, forming micro-protrusions on or micro-cavities in a surface of a substrate from which is formed said slider member, in a manner to reduce sticking between said surface and the other member and to reduce entrapment of foreign particles therebetween, said method comprising:

placing said substrate in a process chamber, wherein said substrate has a smooth curved sliding surface;

supporting a mask member in front of said surface of said substrate, said mask member disposed in contact with or in proximity of a portion of said substrate surface;

—irradiating fast atomic beams through said mask member onto said surface of said substrate, and thereby forming said micro-protrusions or said micro-cavities, said forming comprising controlling said irradiating such that each micro-protrusion or micro-cavity has a top or bottom surface, respectively, and a side surface, with said side surface extending at an inclusive angle of from approximately 80° to approximately 110° to an intended direction of sliding of said slider member relative to the other member.

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at 76. (New) A method as claimed in claim 75, wherein said slider member comprises a magnetic head.

77. (New) A method as claimed in claim 75, further comprising:

forming a protective film layer on said micro-protrusions or said micro-cavities.